

Missouri. Conservationist

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A Conservation Legacy

I can remember my dad instructing me in the use of a BB gun, his original Daisy air rifle well-worn and old enough to sport a wooden stock. The only time I was allowed to use it was at our weekend cabin

on the Illinois River near a small town called Pearl, in Illinois. The town was named after its mussel industry, where large piles of dead mussel shells were stacked taller than most buildings. Mussels were harvested for the button industry, and the entire community was built around commercial fishing. Another favorite attraction was the floating fish market, where I observed boatloads of buffalo, catfish and carp processed for market. My interest in fisheries was sparked by this early childhood fascination with the river and commercial fishing.

When I turned 8, my dad announced that I could accompany him squirrel hunting. He instructed me in the art of still hunting, a technique he perfected, as witnessed by the numerous squirrel dinners we enjoyed. I remember my first shotgun, a single-barrel 20 gauge, and the detailed instructions my dad provided on its proper use and safety.

Duck hunting soon became my favorite sport, as it was with my dad. I remember the first teal hunt in the 1960s on the Mississippi River. By this time we had traded the Illinois River cabin for one along the "Batchtown pool" known for its outstanding duck hunting. I was instructed in the art of setting decoys, calling ducks and eventually training retrievers.

The love of the outdoors extended into the summer with camping trips to many states to fish for sunfish, catfish, trout, etc. During these outdoor family vacations, my dad emphasized conservation and appreciation for fish and wildlife. We had plenty of time to talk during these outings, and he urged me to think about a career where I could love my job and make a difference.

My parents urged me to attend college and supported me in applying for a summer fisheries internship with the Illinois

Department of Conservation, a turning point in my decision to pursue a conservation career. Degrees in biology and fisheries management provided me with the educational necessities to begin this dream. Two years working on the Illinois River with a consulting firm gave me the experience required for jobs with state agencies. In 1976 I was lucky enough to land a fisheries biologist job with the Missouri Department of Conservation. I am thankful to have served in several capacities in the Department. My current position is chief of the Resource Science Division, where I am privileged to lead an outstanding workforce that is

dedicated to providing the best scientific information on which to base management and policy decisions.

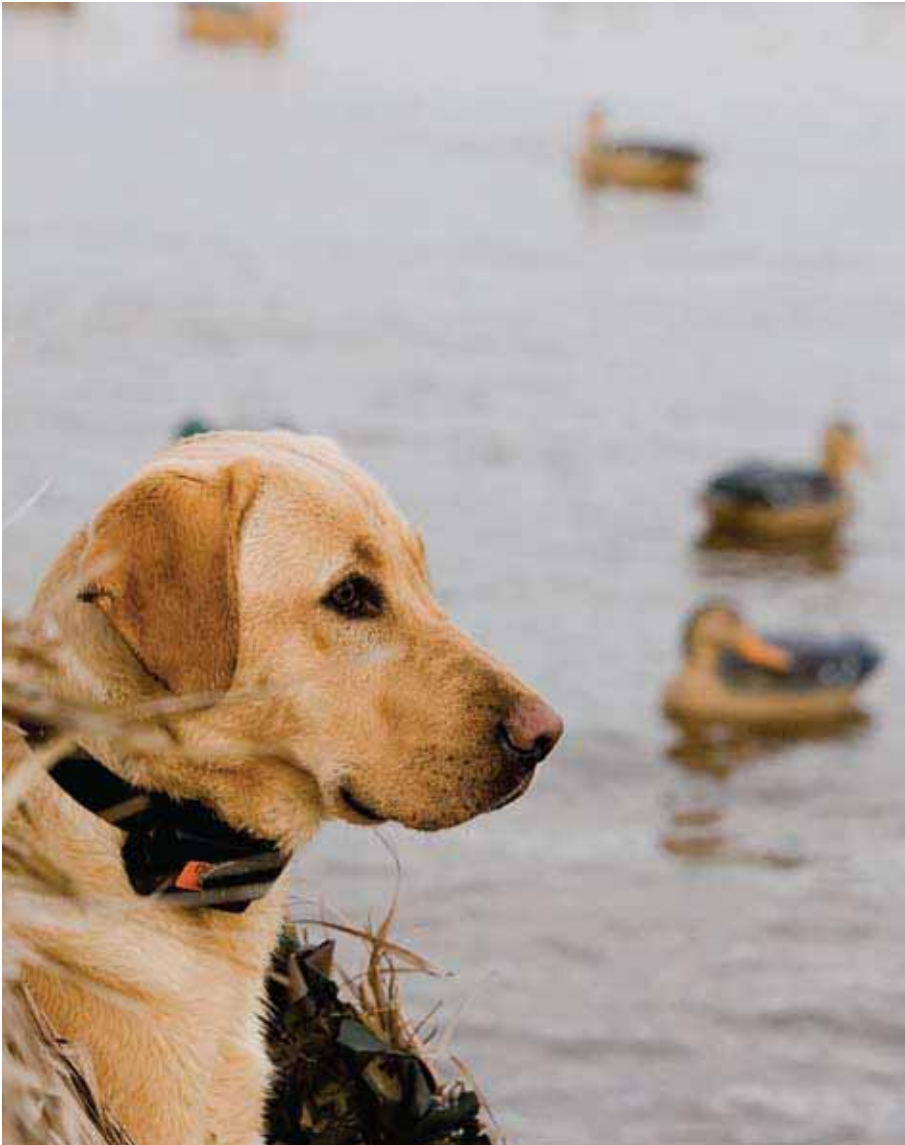
Legacy is defined as "something handed down from one who has gone before or from the past." My dad definitely instilled in me a love for the outdoors and a need to conserve our resources. Handing down a conservation legacy to my daughter, an accomplished deer hunter and angler, and now my grandson, will be my most important accomplishments. So leave your own conservation legacy by instilling an appreciation of fish and wildlife, by getting involved in conservation and teaching youth about the wonders of the outdoors. Thank you, Dad, for leaving a conservation legacy with me!

Ronald Dent, resource science division chief



Ronald Dent (left) and Ronald Dent Sr.









OUR MISSION: *To protect and manage the fish, forest and wildlife resources of the state; to serve the public and facilitate their participation in resource management activities; and to provide opportunity for all citizens to use, enjoy and learn about fish, forest and wildlife resources.*



Cover: male lesser scaup by Daniel S.H Lim
Left: by Noppadol Paothong

NextGEN

This section reports on goals established in *The Next Generation of Conservation*. To read more about this plan, visit www.MissouriConservation.org/12843.

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FALL TURKEY

I was happy to see a fall turkey hunting article in the *Conservationist* [Missouri's October Turkey Season; October].

There are few fall outdoor activities more enjoyable than calling to a group of young turkeys in Missouri's colorful fall woods. As the author noted, scattering a brood flock is the traditional method of hunting young turkeys. However, he failed to mention that running through the woods can be very unsafe. Before running at a flock of turkeys, you should first unload your gun and sling it over your shoulder or even lean it against a tree or fence post. You can return after the break-up to retrieve and load the shotgun safely. In addition, running in the woods can lead to a nasty fall if a hunter trips over a vine, rock, log, downed fence or other obstacle. Believe me, I've attempted to run at turkey flocks in the woods and have tripped a time or two. I now move as close to the birds as possible and then surprise them by quickly showing myself, yelling loudly and waving my arms. Not always

the most effective method of breaking up a flock, but it has kept me from getting hurt from a fall.

Editors' note: The author agrees, and he regrets not including this information.

FFA: GROWING LEADERS

I read with interest the stories about the FFA students and their achievements [Learning, Doing, Earning and Serving; October]. In this world of negative reports on gangs and kids gone wrong what an enlightening article this was. I realize every teen doesn't have the opportunities these wonderful students have, but maybe there is hope for our country with the thousands of stu-



Feral hog

dents in FFA. My granddaughters are growing up on a farm near Paola, Kan. and are learning valuable lessons that will take them into adulthood. Congrats to all these special young people on their awards and the interest they have in making this world a better place for all.

Sharon Peterkort, Lee's Summit

I enjoyed and appreciated the special articles about the FFA students. I attended high school in Windsor and belonged to the FFA chapter. The FFA is a very important part of our education program. Thanks again for recognizing each of the students and helping make our state a good place to live.

Robert Bond via Internet

I'm reading *Learning, Doing, Earning and Serving* and cannot find anywhere in the article an explanation of what FFA means. Please advise.

Susan Morse, Imperial

Editor's note: FFA is no longer an acronym. It once stood for Future Farmers of America, but the organization's name changed to National FFA Organization in 1988 to reflect the expanding career field of agricultural education.

BAD PIGS, GOOD PORK

The feral hogs that you have recommended be slaughtered [Feral Hogs: Bad for Missouri; September] are not nearly the pest that white tail deer are and, to my recollection, have never jumped through a windshield or caused accidents, crop damage and other property damage. One is ugly and one is not, but the white tail deer outweighs problems created by the wild hogs.

Ray Sims, Kimberling City

Editors' note: "There have been confirmed deaths due to hog/vehicle collisions in other states. We've had accidents in Missouri, too. The crop damage caused by hogs can make deer damage look like child's play. Texas records more than \$52 million in agricultural damage alone each year. White tail deer generate millions of state revenue dollars... hogs only create expenses." —Rex Martensen

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Reader Photo PECKY EATER

Diane Goode of Pacific captured this photo of a pileated woodpecker visiting her feeder. "We've seen several of these birds in the strip of woods behind our house, and I often hear their call and pecking on trees," said Goode. "We see all types of wildlife here, even though we live in a subdivision. Fortunately some of the woods have been preserved. My first sighting of a pileated woodpecker was an adult teaching two nestlings to eat insects from a rotting log."

This month check out our featured Web pages, or go online anytime to learn more about conservation at www.MissouriConservation.org.



EAGLE-EYE VIEW

www.MissouriConservation.org/4153

The best chance to view bald eagles in Missouri is in December and January. Make plans now. Check for Eagle Days events within your region.



PIG OUT!

www.MissouriConservation.org/7849

Literally. Missouri needs to rid itself of feral hogs, which compete with wildlife for food, damage habitat and reduce agricultural profitability.



DRIVEN OUTDOORS


www.MissouriConservation.org/18704

NASCAR driver and Missourian Carl Edwards talks about his love for the outdoors in this YouTube video.



ASK THE OMBUDSMAN

WHEN THE DEPARTMENT of Conservation began the ombudsman column, one of the first questions was: What is an ombudsman?



Ombudsman is a Scandinavian term for a person who distributes information and helps mediate disputes. That's been my job for a little more than 10 years. I've probably learned more about people and conservation in the past 10 years than I did during my first 25 years with the Department. Bugs, plants, animals, fish, regulations and a host of other topics are far more than I could ever hope to keep up with, but with the patient help of knowledgeable conservation professionals, my coworkers, we've rarely failed to make an identification or get a correct answer to a question.

I wish I could say we were able to meet everyone's expectations regarding the issues we've tackled. I know that's not the case in every circumstance. But, almost without exception, exchanges have been conducted with mutual respect, and they've usually resulted in progress, or at least a better understanding of one another's views.

The Department of Conservation faces a daunting challenge working for 5.8 million employers, but Missouri is truly fortunate to have folks who value our fish, forests and wildlife enough to amend our state constitution, not once, but twice, in order to protect those resources. The Department is often touted as the nation's premier conservation department. In my opinion, that is a direct result of the actions of those the Department serves.

Being ombudsman has been a very rewarding assignment, but now it's time to pass the reins to another. As I begin retirement, I wish all my employers and coworkers well, and I'll conclude my final piece with a tribute to my wife and our daughters, whose love, support and encouragement mean so much to me.

Thanks for your interest in conservation. —Ken Drenon

on the
TV

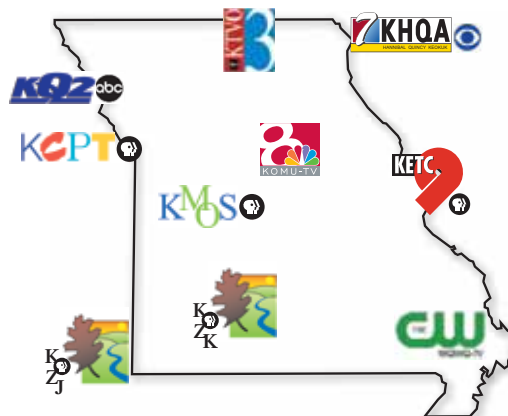
For additional show information and video clips,
be sure to visit

www.MissouriConservation.org/8726

Check local listings for times in your area.



Television
the way
nature
intended!





Species of Concern **Plains Spotted Skunk**



Common name: Plains spotted skunk

Scientific names: *Spilogale putorius interrupta*

Range: Statewide

Classification: State endangered

To learn more about endangered species: www.MissouriConservation.org/8227

THIS RELATIVE OF the larger and more common striped skunk can deliver an even more powerful dose of scent to enemies. Its white stripes do not extend the length of its body. Adults seldom exceed 23 inches from nose to tip of tail, while striped skunks can exceed 30 inches. Skunks are not accustomed to being bothered, and they will register their annoyance by stamping their front feet, clicking their teeth and hissing or growling. Look out if one stands on its front legs! This often is the last step before spraying. Their food consists largely of insects. It is a misnomer that they are “plains” spotted skunks. They are a Southeastern U.S. species that live in savannas and forests. Downed logs, grassy banks, rock crevices and outbuildings provide shelter for spotted skunks. Although once found throughout Missouri, spotted skunks now are confined to remnant populations, mostly in the Ozarks. For more information, visit www.MissouriConservation.org/8355 or www.MissouriConservation.org/127.

Eastern Gray Tree Frog

This amphibian knows how to trick your senses.

Visit a wooded spot just after a summer shower, and you are likely to hear the cheerful trilling of Eastern gray tree frogs (*Hyla versicolor*). You might never guess they are frogs, because they sound like birds. They are less than 2 inches long, and the gray-on-gray markings on their warty skin blend well with the bark of trees, where they usually hang out. At night they often visit patio lights, where they find lots of flying insects.



Look Sharp!

Stay alert or you might miss something unusual.

Brett Shirk, of Kansas City, was hunting squirrels along Mussel Fork Creek Sept. 6 when he spied a large rabbit in the underbrush. Looking closer, he observed huge ears and extremely long hind legs. He kept watching, and when the animal loped off Shirk noticed black fur on top of its tail. It was a black-tailed jackrabbit, a species never recorded before in Chariton County. The lesson: Pay close attention to every bird, mammal, reptile, amphibian, insect or other animal you see. Otherwise you might miss a once-in-a-lifetime sighting. If you see something unusual, take a picture if possible. Photograph tracks and gather other physical evidence. Note the date and time and exact location and report it to the nearest MDC regional office (see Page 3).





Quail Emphasis Areas

Hunt and learn what great quail habitat is

The Conservation Department is turning 19 conservation areas into bobwhite quail management showcases. Biologists use prescribed burning, edge feathering, managed grazing, food plots and more to create and demonstrate quail habitat for landowners interested in quail. These areas also are great hunting spots. Examples include Bois D'Arc CA in Greene County, Crowleys Ridge CA in Stoddard County, Happy Holler CA in Andrew County, William G. and Emma Parke White Memorial CA in Lincoln County and White River Trace CA in Dent County. For more information, visit www.MissouriConservation.org/16802.



want. To learn more about camping on conservation areas, visit www.MissouriConservation.org/2930, and use the "detailed search" function to find camping in a particular county. You can search for camping in designated areas, along roads or walk-in spots for backpacking.

Conservation Camping

No-frills camping gets you close to nature.

Missouri has hundreds of campsites—and potential campsites—that almost no one knows about. That's because they are not in state or national parks, national forests or commercial campgrounds; they are on conservation areas (CAs). CA camping is a different experience than most people are accustomed to. Where formal campsites exist they tend to be primitive. Some, but not all, have pit privies. Only a few have potable water. Some CAs permit camping beside parking lots or trails without so much as a clearing or a fire ring. This full-nature-contact camping is exactly the kind of outdoor experience that some people

Trail Guide



HIT THE TRAILS AT BUSCH CA



MORE THAN 12 miles of hiking, biking and auto tour trails crisscross August A. Busch Memorial Conservation Area in St. Charles County, providing access to 6,987 acres of forests, fields, lakes and streams. The Busch Hiking and Biking Trail is a 3.2-mile double loop that follows a natural-surface service road through woods and fields. Along the way it passes concrete abandoned munitions-storage bunkers dating to World War II. The Fallen Oak Nature Trail is a .7-mile asphalt loop, part of which is accessible to wheelchair users. This is a self-guiding trail, with an interpretive booklet available at the trail head. The Busch Auto Tour consists of 8.7 miles of graveled interior roads. This route also has a booklet explaining features of interest, available at the area office or tour entrance. The auto tour has five short nature trails. Bird-watchers can see shorebirds in the 3-acre wetland, and anglers can catch bass, bluegill, catfish and crappie in 32 lakes.

Area name: August A. Busch Memorial Conservation Area

Trails: Hiking, biking and auto tour, some wheelchair accessible

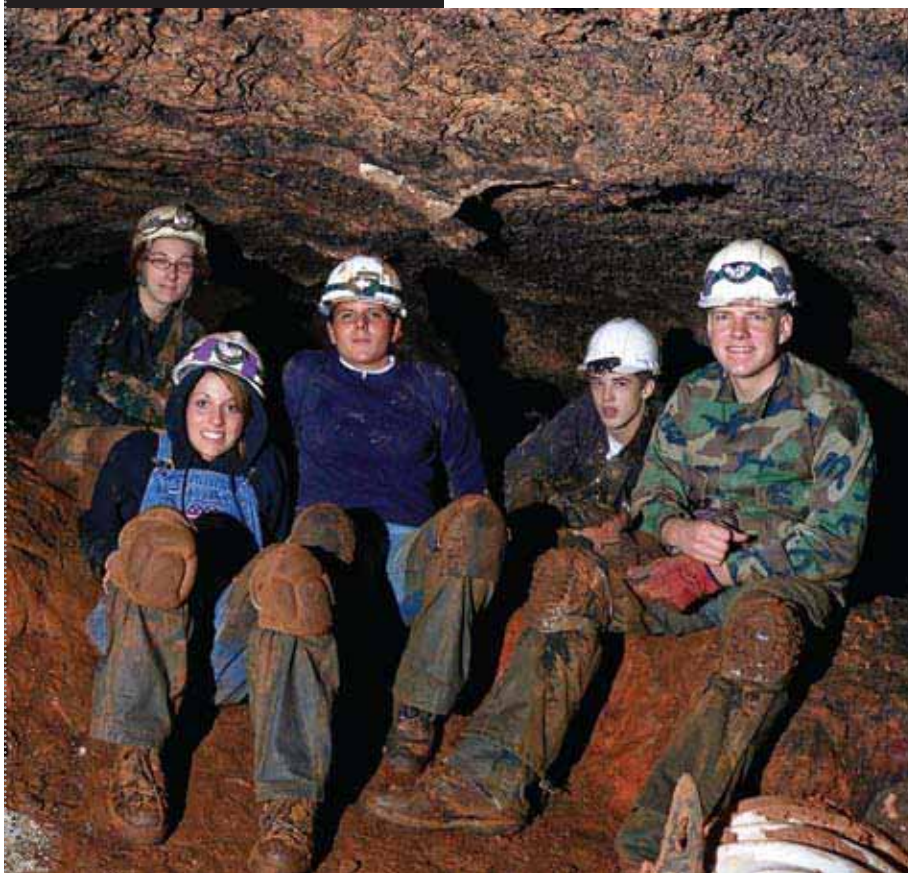
Unique features: Fishing and wetland bird-watching

For more information: Call 636-441-4554 or visit

www.MissouriConservation.org/a4901



TAKING ACTION

Licking High School Science Club

SOME PEOPLE TREAT caves like just another hole in the ground. Their sinkholes are used as dumps, and their treasures are plundered or vandalized.

This disturbs Jim Kaufmann of the U.S. Geological Survey in Rolla, who knows that these valuable habitats are home to delicate ecosystems and historic wonders. So he recently led two groups of enthusiastic Licking High School Science Club members on a show-and-tell adventure that focused on the importance of cave conservation.

No strangers to the active side of science education, the club members regularly participate in float trips, camping, star gazing, wild game cookouts and conservation service projects, such as trail cleanup and invasive species eradication. Wes Holmes, a science/math teacher and one of the group's leaders, says that the club's goal is to provide wholesome experiences in the outdoors and encourage kids to become more aware and concerned about their environment. "It's good for the kids, the community, the state and our resources," Holmes says. But he insists that "plain old fun things" are just as important as intentionally educational exercises in the outdoors.

The students spent more than eight hours exploring miles of passageways at a cave in Pulaski County and learned about caves and karst, cave environments, basic caving skills, and cave conservation and ethics. Though the outing was intensive and educational, according to Holmes, no one had to remind the students to have fun.

Confluence Conservation*Partners donate easements and plan habitat restoration.*

The Missouri and Mississippi rivers are major migratory pathways for birds. Ducks, geese, shorebirds, large wading birds, raptors and songbirds use the habitats along the confluence of these rivers to rest, refuel and nest. The Missouri/Mississippi River Confluence also provides important resources for agriculture and water quality.

To ensure the Confluence continues to fulfill its historic roles, despite development pressures, a diverse partnership has developed among conservation organizations, St. Louis-area duck hunting clubs and private landowners to restore and maintain the area.

One successful strategy has been to work with landowners to establish conservation easements. Conservation easements are used by landowners to protect their lands from development while allowing them to retain ownership and use the land for economic gain or recreation. They do not prevent landowners from using the property for farming, ranching, forestry, hunting or other recreational purposes. Confluence area easements serve double duty as they permanently protect important habitat, and the value of the easements is a major contributor of match money used in securing North American Wetlands Conservation Act grants. These grants are used to restore aging infrastructure on historic public wetland areas.

Seven area duck clubs have made the commitment to permanently protect nearly 5,000 acres. These partners were recently honored at an event hosted by Ducks Unlimited and the Great Rivers Habitat Alliance. The meeting not only recognized their generous gifts, but provided a forum for conservation partners and landowners to discuss future plans for the Confluence.





Hunt/Fish Calendar

New! A calendar focused on outdoor recreation.

Missouri's *Outdoor Heritage* is a new calendar designed to keep outdoor-oriented people up-to-date. Each month provides an almanac of season information and outdoor tips, topped by

photos of wildlife or hunting and fishing moments. To order, call toll free 877-521-8632 or visit www.mdcNatureShop.com.



The price is \$7 each, plus shipping, handling and sales tax, where applicable. You can also find them at nature centers and Conservation offices where Nature Shops are located.

State-Record Striper

Man caught a striped bass that outweighed his child.

Hannah Blair, 4, who weighed 52 pounds in mid-July, thought it was pretty neat that her dad caught a fish that weighed more than her. Greg Blair, her father, thought it was pretty neat, too, especially since his catch was a state record.

Greg caught the 56.35-pound striped bass in upper Bull Shoals Lake early in the morning July 13.

He was using an oversized jerk bait called a King Kong. He weighed his catch on a certified scale at Shepherd of the Hills Hatchery.

Download complete information

about state record fish at www.MissouriConservation.org/7223.



Deer Hunting at Saline Valley

Scout it Out



Name: Saline Valley Conservation Area

Location: Miller County, 2.3 miles southeast of Eldon on Highway M off of Highway 54 .

For more info: www.MissouriConservation.org/a7724



FINDING A SECLUDED spot to hunt deer at Saline Valley Conservation Area on opening weekend of the firearms seasons might be difficult. After all, you might see as many as 150 vehicles belonging to deer hunters in area parking lots and along roads that provide access into the 4,783-acre area. The hunting justifies the crowds, though. Saline Valley manager

Dennis Rhoades said hunters take many "nice, full-bodied deer" from the area.

Rhoades credits the good hunting to habitat improvements Conservation Department staff have undertaken on the area. Over the past 10 years, they have "recaptured" many fields that were choked with honey locust and planted them in native grasses. They've also been feverishly eradicating autumn olive and have been mowing and brushhogging the edges of fields to make them more wildlife- and hunter-friendly. "This year, we've also got a great sunflower crop, and we'll have corn on the ground," Rhoades said. "Everything seems to be in an upswing."

Although opening weekend crowds keep the deer moving, the pressure soon dissipates and hunting becomes a more solitary activity. The deer recover, as well, and resume their normal movement patterns.



Frost Flowers

Violence on a small scale delivers ephemeral beauty.

Having someone hand you a bouquet of frost flowers is a sure sign that your relationship has gone cold. That's because frost flowers, which really aren't flowers at all, won't survive a warming. In fact these icy blooms often crumble at the slightest touch of a hand or the sun.

Frost flowers form when icy conditions chill juices in plant stems. The expanding moisture bursts through the plant's skin like water from a frozen pipe. Numerous cracks along the plant's stem often give frost flowers a ribbon-like appearance. Air bubbles in the ice make these flowers almost weightless and snow white.

Look for frost flowers on cold fall mornings. You can often see patches of them alongside rural roads. They are usually more abundant in wet years or in wet areas. Frost flowers only occur on plants that still contain moisture. Yellow ironweed and white crownbeard mature late in the year and often produce frost flowers when conditions are right.

Be early, and be quick with a camera. Frost flowers may linger for half a day in protected or shaded areas, but they usually "wilt" quickly under the rising sun.



What a Nut!

Make picking pecans a fun event for the family.

Many people gather pecans for profit and, given the amount of bending and lifting necessary, they certainly earn what they make. If you reduce the size of the enterprise to gathering just enough pecans to make a pecan pie or two, however, what might seem work ends up as family fun—with a scrumptious pie, to boot.

Like sweet corn and fish, pecans are best when fresh. If you can't use them right away, freeze or refrigerate them to preserve flavor. There are more than 500 varieties of pecans, so experiment with nuts from different trees. Collect fallen pecans in a bucket or bag. Expose the meat with a nutcracker.

BIRDS OF A FEATHER

Canvasback

HIGH UP IN the sky this month you may spot V-formations of canvasback ducks. You can recognize canvasbacks on the wing by their sloped forehead and bill, which gives them a distinctively long head profile, and by the black chest of the males. Although the birds—especially breeding males—appear very white from a distance, up close you'll see a fabric-like pattern among their back feathers that is likely the source of the canvasback name. Their bills are black and their head and neck range from chestnut-red on males to a pale rust on females.

The species name, *Aythya valisineria*, comes from the name for wild celery, *Vallisneria americana*, a preferred winter food of the canvasback. These large diving birds fold their wings and paddle with their big feet to reach food. On the water, flocks of canvasbacks are often accompanied by American coot and other waterfowl, which feed on material brought up or stirred up by the larger ducks. Biologists refer to this feeding relationship as "commensal." Canvasbacks, in turn, sometimes follow feeding tundra swans.

Canvasbacks find new mates each year. The birds build bulky nests among emergent vegetation. Adult males leave while the female incubates the eight to 10 eggs. The young can feed a few hours after hatching. Late-nesting females often leave their young before they are able to fly.



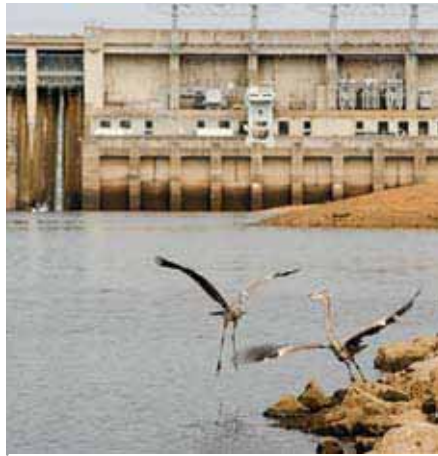
CANVASBACK: JIM RATHERT; FROST FLOWER: JIM RATHERT



Counting Critters

Critters give us clues about the health of our streams.

Healthy streams don't always have clear water, and clear streams can be polluted. Stream Teams use biological monitoring to evaluate stream health without lots of equipment. They catch critters on the stream bottom with nets. Then they identify and count them. Stonefly and caddisfly larvae need pure water to survive, so if they are present, water quality is good. Dragonfly larvae and crayfish tolerate some pollution, so their presence—without more sensitive species—means moderate pollution. Blood worms and mosquito larvae can survive in very polluted water. If they are all you find in a stream, it isn't very clean.



Bagnell Changes Help Nature

Water releases now consider fish and other wildlife.

Changes at AmerenUE's Osage Hydroelectric Project, better known as Bagnell Dam, are making the lower 82 miles of the Osage River a healthier place for fish and other wildlife. Under an agreement inked last year, the private utility company has installed hydroelectric generating turbines and a new control system designed to keep oxygen and nitrogen levels safe for fish below the dam. AmerenUE also is installing a net to keep fish

from passing through the turbines and being injured, and has taken measures to avoid fish kills due to violent currents below their spillway during floods. Another change involves providing minimum flows through Bagnell Dam when AmerenUE is not generating electricity to meet power needs. Providing minimum flows ensures that walleye, white bass and paddlefish have suitable conditions for spawning each spring. It also helps protect endangered fresh-water mus-sel species from exposure during low-flow periods. These accommodations to meet the needs of fish and wildlife are written into AmerenUE's federal license to operate for the next 40 years.

Stream Team



Upper Jacks Fork River Rats



"FAMILY AFFAIR" DESCRIBES the Haviland Family's commitment to stream conservation. Four generations of the family are involved. Founders Ted and Pat have floated the Jacks Fork River for many years, and when

they noticed a growing trash problem they didn't complain, they organized! Forming their own stream team was just the start. More recently they have helped found the Scenic Rivers Stream Team Association, harnessing the power of multiple stream teams for bigger projects than any one could tackle alone. The men of Stream Team 713 recharge their batteries by floating the Eleven Point River on New Year's Eve each year. Once they had to break ice to leave their campsite. To keep their shared passion for conservation fresh, Ted and Pat take a float trip around Valentine's Day. Pat says, "Children are our future, and water is their future. To keep water clean, you've got to keep everything clean."

Stream Team Number: 713

Date formed: Oct. 31, 1995

Location: Jacks Fork River

For more info about Stream Teams: www.mostreamteam.org



Our Glorious Forests

POOSEY CONSERVATION AREA



Size: 5,738 acres

Location: 13 miles northwest of Chillicothe in Livingston County

Habitat types: Forests, grasslands, croplands, prairie, old fields and savanna.

Facilities: Boat ramps, picnic area and pavilion, fishing dock, firearms and archery ranges, numerous fishing ponds, Indian Creek Community Lake and Hawthorn Natural Area. Equestrian riding allowed north of Highway A.

Find more info: www.MissouriConservation.org/a7935



POOSEY CONSERVATION AREA is a paradise for deer hunters. With its combination of hardwood forests and tallgrass prairie, the area's thriving plant and animal community supports deer, turkey, raccoons, squirrels, quail, rabbits, coyotes, foxes and many other small animals and birds. To sustain this natural diversity, Poosey's managers

aim for a wide range of habitat types. Recently cut areas provide thick browse and escape cover. Older forests provide shade in the summer and protection from the wind in winter. Healthy oak-hickory forests provide hard mast in the form of acorns and nuts, which deer and other wildlife eat if other food is not available. While it is known for rolling uplands, Poosey's riparian forests shelter its streams, ponds and watering holes, keeping them cool and clean. To learn more about this glorious north central Missouri forest, visit the area online at www.MissouriConservation.org/a7935.

Order Seedlings

State nursery provides low-cost seedlings.

If you've been planning to establish a wind-break or quail-friendly shrubs—or just make your home landscape a little more attractive to wildlife—now's the time to order shrub and tree seedlings from the George O. White State Forest Nursery. Seedlings are sold from mid-November to the end of April, and bundles range from \$4 to \$30. Find the order form online after Nov. 15 at www.MissouriConservation.org/7294.

The Web site also includes tips about selecting, planting and caring for your seedlings.



We All Live in a Forest

Missouri's "mast" yields triple riches.

Save room for pecan pie after Thanksgiving dinner. Recent research shows that a diet containing pecans, a member of the hickory family, not only lowers total and "bad" LDL cholesterol, it helps maintain desirable levels of "good" HDL cholesterol.

Missouri is rich in trees that grow nuts—or mast—both in the wild and on farms. For example, more than 9,000 acres and 380 farms in Missouri produce pecans, and Missouri currently supplies nearly 70 percent of the world's wild black walnuts.

Although few people relish acorns, wildlife loves them. Missouri's 21 species of oaks yield food for numerous wild critters, as well as timber for industry. So pass the pecans, hickories and walnuts, and give thanks for Missouri's delicious, healthful and valuable mast.





Order Free Quail Calendar

Get 12 months of tips for better bobwhite habitat.

Want to increase quail and other grassland wildlife but have a hard time remembering seasonal habitat needs? The 2009 *Your Key to Quail Habitat* calendar keeps management reminders in view. Each page includes life cycle and management notes, as well as wildlife illustrations by Conservation Department artists David Besenger, Mark Raithel and Charles Schwartz. These free calendars will be available in MDC regional offices in late November. Call your regional office for more information (see Page 3).



Business and Conservation

Enthusiasts can use LLCs to conserve habitat.

Some wildlife enthusiasts are using LLCs—limited liability companies—to set up their own private preserves while supporting conservation in a concrete way. The nine owners of Massasauga Flats, a private wetland near Meadville, formed their LLC to demonstrate how to restore and manage Wetland Reserve Program tracts. “Anyone can do this,” says George Seek, a former Department wetland biologist. “The most important part is putting together the right mix of people who agree on the purpose and are willing to do the work.” Tasks include maintaining the LLC’s legal status and managing the property for the group’s agreed-upon values. Because members share the costs, they can form an LLC relatively inexpensively. As with any legal undertaking, begin the process by consulting your professional advisors.



Set Back Fescue for Better Quail Habitat

On the Ground



Greg Becker (left) and brother Tom Becker on their farm.

YOU DON’T NEED to plant lots of warm-season grass to boost quail numbers. In 2006, Gasconade County landowners Tom Becker and his brother Greg set back 60 acres of fescue on their property. Just a year later, they reported seeing two new coveys on their land. “We didn’t realize how bad fescue was for wildlife,” Tom said. The Beckers’ private land conservationist, John Knudsen, recommended they eradicate the fescue with herbicide and time the applications to minimize the negative effects on native grasses and wildflowers already in the fields. This was the least-cost alternative for them to reach their goal of re-establishing suitable habitat for quail and other small game species. “The first year the wildflowers came in just gorgeous,” Tom said.

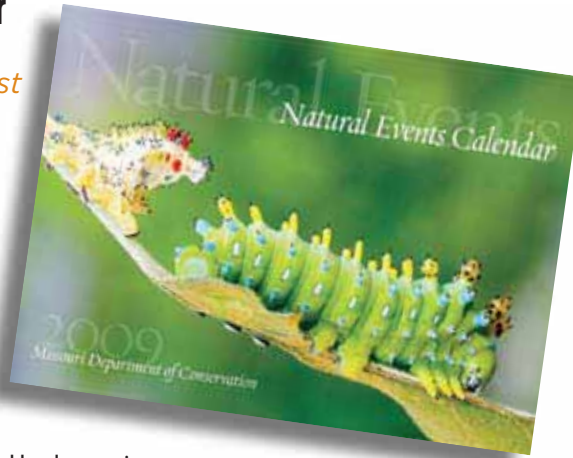
Fall is a good time to start eradicating fescue. For detailed instructions on preparing your site and timing your herbicide applications, visit www.MissouriConservation.org/18593.



Get Your 2009 Calendar

At Nature Shops and online while supplies last

Clock-full of dazzling photographs, fascinating natural history details and native-plant gardening reminders, the Conservation Department's *Natural Events Calendar* sells out fast every year. The 2009 edition features Department of Conservation staff and volunteer photos of Missouri plants, animals and landscapes in every season, and it's on sale now. This year's opening spread features wild animal babies and the message, "If you care, leave them there." Home gardeners will appreciate native-plant gardening tips following the monthly pages. Don't wait to get the 2009 *Natural Events Calendar* for every nature lover on your Christmas shopping list. To order, call toll-free 877-521-8632 or visit www.mdcNatureShop.com. The price is just \$7 each, plus shipping, handling and sales tax, where applicable. You can also find them at nature center and Department of Conservation offices where Nature Shops are located.



Arbor Day Poster Contest

Fifth-grade classrooms eligible to participate

Missouri's fifth-graders are challenged to create posters reflecting the theme "Trees are Terrific . . .

In Cities and Towns!" The annual contest, co-sponsored by the Missouri Department of Conservation, the Missouri Community Forestry Council, the National Arbor Day Foundation and Toyota Motor Corporation, educates children about the importance of planting and caring for trees. The deadline for state contest entries is Feb. 6. Fifth-grade teachers can order a contest packet by contacting Donna Baldwin, poster contest coordinator for Missouri, at PO Box 180, Jefferson City, MO 65102, or e-mail donna.baldwin@mdc.mo.gov.

NATURE ACTIVITY



Eagle Days Statewide



EAGLES HAVE MADE a big comeback in Missouri, and winter is the best time to watch them perching, soaring and diving for fish along rivers and lakes. To celebrate the return of wintering bald eagles, many MDC

locations hold annual Eagle Days events. Great for families, these events feature live eagle programs, exhibits, activities, videos, guides with spotting scopes and refreshments. Visit www.MissouriConservation.org/4153 for details about the seven Eagle Days events held around the state. This Web page also lists 12 excellent locations for eagle watching if you can't make it to an Eagle Days program. Some of the best viewing locations include Bagnell Dam Access at Lake of the Ozarks, Eagle Bluffs Conservation Area, Swan Lake National Wildlife Refuge and Truman Reservoir. We hope you'll join us at an Eagle Days event or use our Web resources to view our national symbol in the wild.

Where: Clarksville in Pike Co., Old Chain of Rocks Bridge in St. Louis Co., Smithville, Squaw Creek in Holt Co., Lake Ozark, Springfield, and Mingo National Wildlife Refuge in Puxico

Check schedules and details:

www.MissouriConservation.org/4153





D DIVERSE IVERS

Although not seen as frequently as their puddle-loving cousins, these fast, deepwater ducks keep things interesting.

BY JIM LOW

PHOTOS BY NOPPADOL PAOTHONG

ART BY KRISTIN WILLIAMS

Fleeing before a wild north wind, they materialize like wraiths. Scimitar wings slice through the air with a sound like a huge curtain tearing. The spectacle always sends a chill down my spine.

Say “duck” and most Missourians automatically conjure the image of an emerald-headed drake mallard. But if you spend enough time around big water, you will encounter several different types of ducks.

These ducks dive 40 feet or more for food instead of tipping bottom-up or dabbling for seeds in shallow water. Consequently, they are commonly known as “diving ducks,” in contrast to their shallow-water cousins, the “puddle ducks.” You are most likely to see diving ducks along the Mississippi River or a big lake.

Bill Powell (left) and Brad Wright use mallard calls with slight alterations to hunt diving ducks.

Diving requires a streamlined shape and legs far back on the body. A denser body helps these birds get down to food. It also causes them to ride lower in the water on the surface, giving diving ducks a distinctive, low profile.

Dense bodies are harder to launch into flight, and so most diving ducks must run along the surface of the water to achieve flying speed with their relatively short, pointed wings. Once in the air, they must move faster than other ducks to remain aloft. If giant Canada geese are B-52s of the waterfowl world, diving ducks are the fighter jets.

Exactly how fast they fly depends on conditions. Puddle ducks routinely

To a good retriever, a duck is a duck, and they will happily retrieve divers.

If giant Canada geese are B-52s of the waterfowl world, diving ducks are the fighter jets.

cruise at 40 mph, while teal swoop and wheel at 60 mph. Canvasbacks have been clocked at 70 mph. With a stiff north wind at their backs, divers make challenging targets. A hunter who can hit them consistently is not someone to bet against in a shooting contest.

Any duck with fast wing-beats and plumage that looks distinctly black and white is a likely suspect for the moniker “diver.” However, several diving ducks flout this rule, and hens of most species tend to be gray or brown.

Diving ducks are further divided

into bay ducks, sea ducks, mergansers and stiff-tails.

Immigrants noticed the similarity of North America’s bay ducks to the common pochard of Europe, and you still hear this term applied to some, especially the canvasback and redhead.

The canvasback (*Aythya valisineria*) is our most imposing pochard. It is the largest, with adults averaging 21 inches from head to tail. Drake canvasbacks’ coloration is very similar to redheads’, but the canvasback’s black, chisel-shape bill is unmistakable, even at a distance.



You see canvasbacks mostly in bigger, deeper waters than other diving ducks. In Missouri they seldom stray far from the Mississippi River. During the migratory peak, canvasbacks sometimes gather in rafts of hundreds of birds.

The redhead (*Aythya americana*) is the spitting image of the European pochard. At 19 inches, it is only slightly smaller than the canvasback, but its head has a rounded profile, and the bill is more like those of other ducks. Both male and female redheads have bluish-gray bills with black tips.

The ring-necked duck (*Aythya collaris*) is one of the smallest and most common bay ducks in Missouri. Ring-necks cruise big rivers and lakes, but they also frequent ponds, marshes and managed wetlands. Their small size, together with typical diving-duck plumage and speed, make ring-necks fairly easy to recognize on the wing.

Don't be confused if you shoot what you think is a ring-necked duck but are unable to find the ring. The name refers to an indistinct band of chestnut-colored feathers at the base of the drake's neck. A better identifying characteristic is the white ring near the tip of the gray bill. It might have been better named the ring-billed duck.

Greater and lesser scaup (*Aythya marila* and *affinis*) look as if they were dressed for a black-tie affair. The drakes' bold black-and-white markings and their tight flying formations make scaup easy to recognize in the air. Scaup lack the black end and white ring that ringnecks have around their bills, but they do have a black fingernail-like scale at the tip.

Telling the two species apart is more difficult, but not impossible once you see enough of them to recognize the greater scaup's longer wing patches. These light markings run nearly to the tips on the upper side of greater scaup wings, but only about halfway out on the lesser. Both have

Canvasback



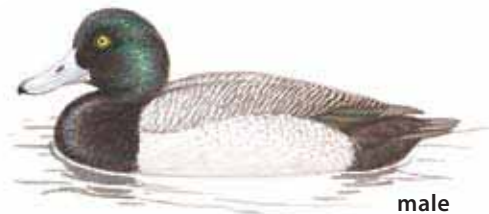
Redhead



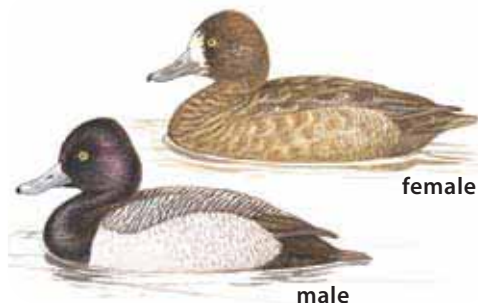
Ring-necked



Greater scaup



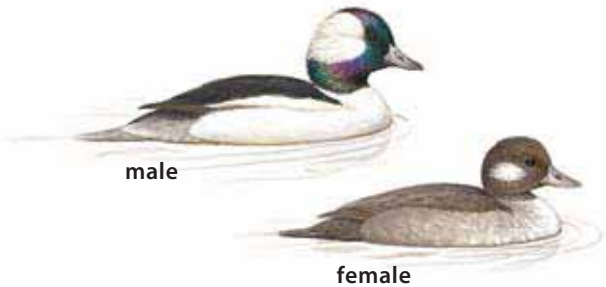
Lesser scaup



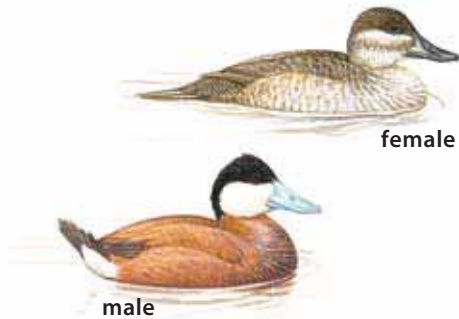
Common goldeneye



Bufflehead



Ruddy



Hooded merganser



Common merganser



the bluish-gray bill that accounts for the nickname “bluebill.”

Unfortunately, most hunters don’t see enough scaup to become proficient at telling the two species apart. For that reason, the bag limit includes both greater and lesser scaup.

Once you have a scaup in hand, you can tell the greater scaup by the rounded profile of its head, or the lesser by a slightly peaked, angular shape. On drakes, look for a subtle green iridescence that marks the head of the greater scaup or the purple sheen of the lesser. Also, greater scaup seldom are seen in Missouri and almost never on wetlands.

Sea ducks—as their name implies—are creatures of large, open waters. Many sea duck species are rare visitors to Missouri. Weeks after puddle ducks have deserted Missouri, two species of sea ducks—the common goldeneye (*Bucephala clangula*) and the bufflehead (*Bucephala albeola*)—continue to ply Missouri’s large reservoirs. Drakes of both species have dark heads with white spots. However, the placement of the spots makes each species fairly easy to distinguish. On the goldeneye, the spots are on the cheeks, whereas the bufflehead has a large white spot on the back of its head. At 14 inches long, the bufflehead is the runt of the divers.

My nominee for cutest diving duck is the ruddy duck (*Oxyura jamaicensis*), a member of a group known as stiff-tailed ducks. Drakes engaged in their mating display are so perky even an avid hunter might be tempted to pinch their little white cheeks. Ruddy ducks are only slightly larger than buffleheads. They are uncommon in most of Missouri, but you are more likely to see them the closer you get to the Arkansas state line.

That leaves the hooded merganser (*Lophodytes cucullatus*) and the common merganser (*Mergus merganser*), large fish-eating ducks with nar-



row, serrated bills ideally suited for holding slippery food. Mergansers superficially resemble pintails in flight, due to their sleek, graceful bodies and pointy tails. The shapes of their heads and bills are distinctive, however. Mergansers also tend to arrive and stay later in Missouri than pintails.

It's a good thing mergansers are so distinctive, because the main reason to shoot one is to have it turned into a taxidermy mount. The merganser's diet gives it an unpleasant fishy taste.

Diving ducks in general are less esteemed as table fare because their diets are long on fish, snails and other

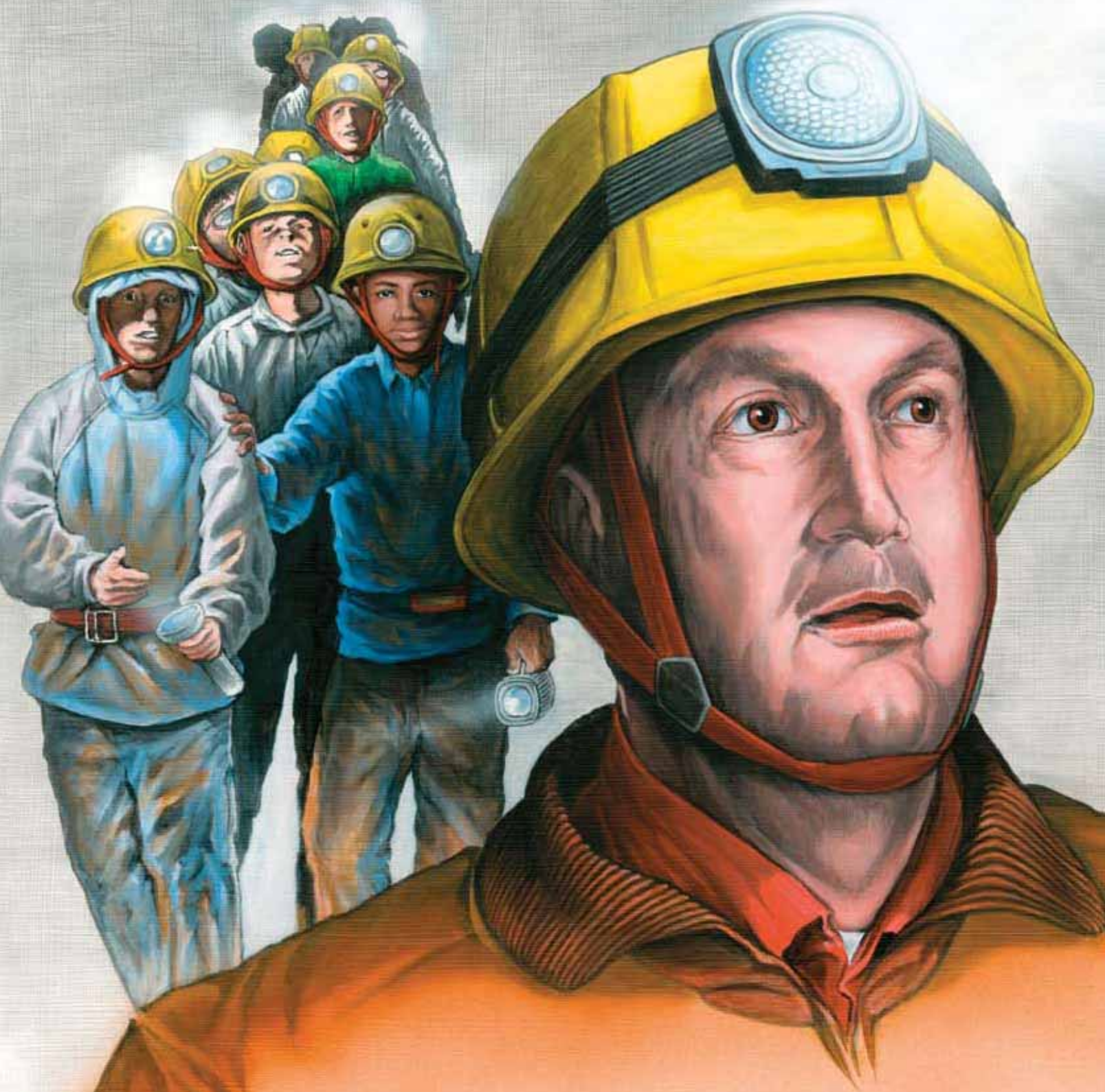
invertebrates, while puddle ducks tend to eat more grain, weed seeds and other plant foods. The canvas-back is a notable exception. Though relatively uncommon, it is highly sought after by hunter epicures.

A handful of other divers have been seen in the Show-Me State, but they are too rare for the average hunter to worry about. For help identifying these and other waterfowl, write to MDC, *Ducks at a Distance*, PO Box 180, Jefferson City, MO 65102-0180 or e-mail pubstaff@mdc.mo.gov. Before you go afield, make sure you know all current regulations and limits. Pick up a *Waterfowl Hunting*

Brad Wright sets up a decoy for hunting. Diving ducks can be attracted by motion decoys just like puddle ducks. As in any duck hunting, proper camouflage is important.

Digest where permits are sold or see www.missouriconservation.org/7573.

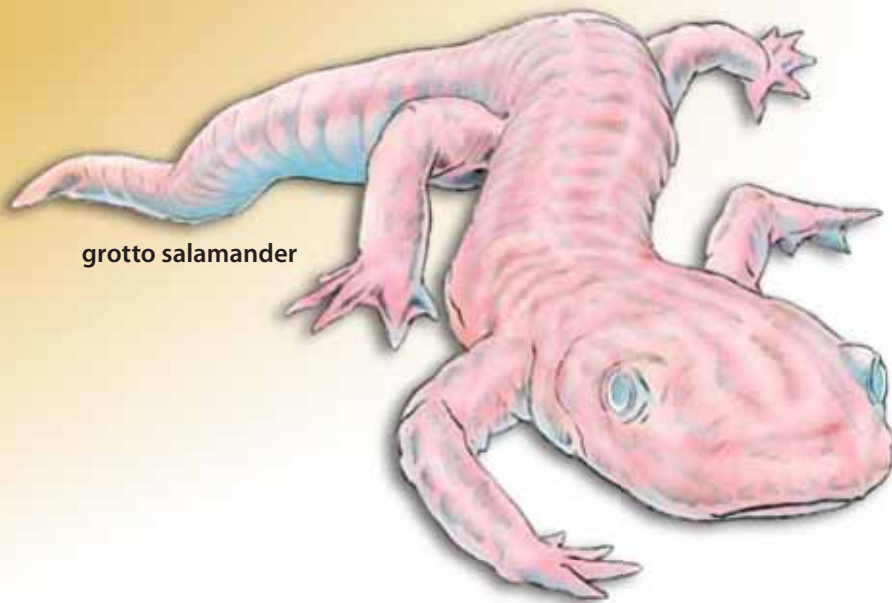
More detailed information is found in *Birds in Missouri*, a 375-page, soft-bound, large-format book covering more than 350 species. It is available for \$30 plus shipping and handling and sales tax (where applicable) by calling 800-521-8632 or visiting www.mdcnatureshop.com. ▲



An UNDERGROUND **ADVENTURE**



A Boy Scout field trip molded a generation of conservationists. BY DAVID URICH, ART BY DAVID BESENGER



grotto salamander

I was standing in front of Smittle Cave on the Fuson Conservation Area in Wright County with more than 30 Boy Scouts. Smittle Cave is one of Missouri's larger caves with about 2 miles of mapped passages. It provides important habitat for the Indiana bat and gray bat, both on the Federal Endangered Species List.

I had just unlocked a small entrance through a massive steel gate that blocked the opening to the cave. This cave gate was designed to keep people from unintentionally disturbing the bats at critical times of the year while still allowing visitors good access to the cave. Reservations were required for entering this cave in order to protect its resources from excessive disturbance.

We were visiting in March, which is about the only time of the year when the endangered bats are not using the cave for hibernation or raising young.

The scouts were lined up and I was doing one last check of their safety equipment. Each scout had a helmet with a chin strap because it's very easy to hit your head on low hanging rocks in a dark cave. They each had three flashlights, and I had a backpack full of spares, which would be needed as the scouts dropped and banged theirs on the rocks.

Before we entered the cave, I talked about caving procedure and the proper way to visit a cave without causing damage to geologic features.

None of the scouts had explored a Missouri

cave before. When I asked them what animals we would see inside, they all said the same thing: snakes and bats. They were right about bats, but they were going to see a variety of other unusual animal life that most Missourians would never see. Snakes generally are only found at the cave entrance, if at all.

We waded through some nearly knee-deep mud for the first quarter-mile of the cave. I learned over the years that scouts are comfortable with mud, and are not concerned with getting filthy.

Soon we came to a system of small, shallow cave pools with very clear water. I asked the scouts to turn out their lights. As we stood in complete darkness, I asked if anyone knew how caves were formed. Out of the darkness came many theories, mostly centering around earthquakes or other catastrophic events—all wrong, of course.

I turned on my flashlight and guided the beam down through the descending series of pools and explained that water moving through the limestone dissolved the rock and created Missouri's caves. I shined my light into the nearest pool so the scouts could see the grotto salamanders. These nearly white, 3-inch long, blind salamanders only live in shallow pools with clear, flowing water in the darkest parts of Missouri caves.

I raised my flashlight up to the cave wall to show the scouts the flowstone, where oozing water left smooth, almost translucent mineral deposits that looked like clear marble. A spot on the flowstone was darker than the rest, and I explained that years ago someone had stepped on this area with muddy boots. The mud was encased in new flowstone and will be a part of the cave forever.

The scouts seemed to understand how their visit to this cave could cause lasting damage if they were not careful.

Next we moved to the area where Indiana and gray bats roosted on the cave ceiling. Almost all of the bats were gone, but I pointed out the large dark spots where they had hung upside-down by their feet. Their urine stained the rock on the cave ceiling a very dark brown.

I then moved my flashlight beam to the ground and pointed out a pile of bat droppings, called guano, and we talked about how the size of the guano pile could be measured in order to

estimate the number of bats.

There were web worms on the guano and other unusual, nearly white insects feeding on the remains of a few bats. There were no takers when I asked for a volunteer to touch the guano and report back to the others on what it felt like.

Deeper in the cave, the scouts learned how stalactites and stalagmites were mineral deposits left behind by dripping water. I explained how it took thousands of years for these formations to grow, and that they are very delicate and should not be touched.

We started exploring other arms of the cave and saw several more pools with grotto salamanders. We found white millipedes feeding on tree leaves that had been washed into the cave. The cave arthropods, or insects, were

Soon scouts were strung out
OVER A HALF-MILE OF FOREST,
but at least everyone was heading in the
RIGHT DIRECTION.

MISSOURI CAVE FACTS

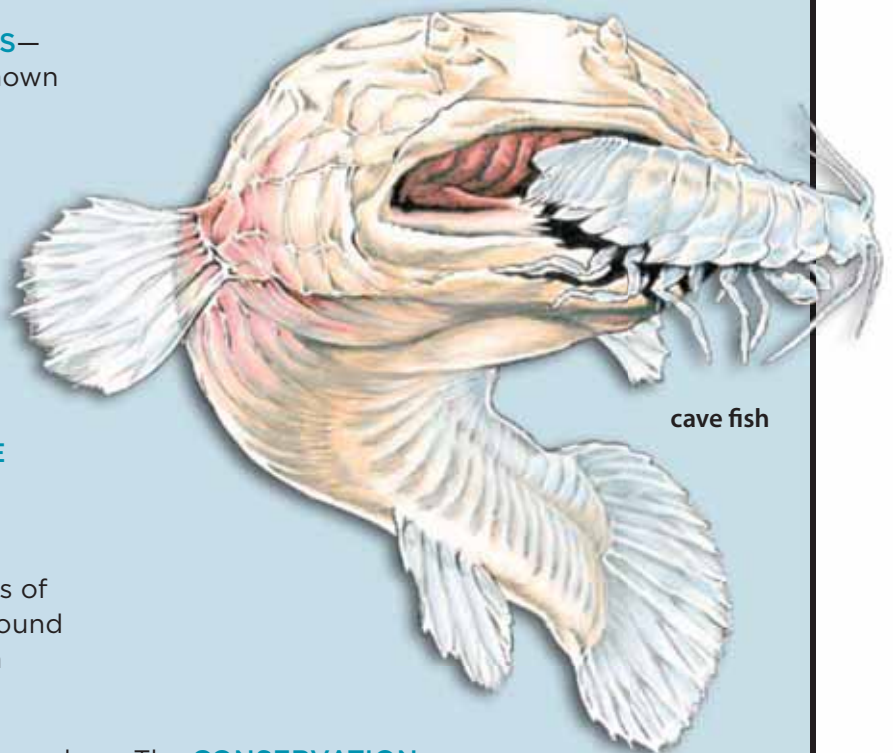
Missouri has more than **6,200 CAVES**—second only to Tennessee—and is known as the Cave State. More caves are discovered every year.

KARST is the geologic term referring to locations with underground caves, sinkholes and losing streams, where water disappears underground and exits as springs.

Missouri caves were used by **NATIVE AMERICANS** for shelter and burial ceremonies

Missouri caves are habitat for species of **SNAILS, CRAYFISH AND INSECTS** found nowhere else in the world and which cannot survive outside of caves.

Missouri's **LIMESTONE BEDROCK** formed 300 to 500 million years ago as ancient sea beds that were then uplifted to form the Ozarks. This created ideal conditions for cave formation as water seeped underground dissolving the limestone.



cave fish

The **CONSERVATION DEPARTMENT** protects hundreds of caves on public land and assists other agencies with cave inventory, management and protection.



gray bat



Indiana bat

mostly white, because they did not need pigment to protect them from the sun or conceal them from predators.

I eventually noticed that the water was getting much deeper in the cave and seemed to be flowing at a more rapid pace. This was strange, so we decided that it was prudent to make our way out of the cave. In some areas the water was almost waist-deep on these 13-year-old scouts.

When we emerged from the cave, I realized why the water was rising so rapidly inside. It was raining hard and had been doing so for hours. The cave watershed was funneling water into the cracks leading to the underground system, just as it has for thousands of years.

The small creek that we crossed as we approached the cave entrance earlier that morning was a raging torrent, unsafe to cross. Several of the other adult leaders were waiting on the other side of the creek wondering if we were ever coming out of the cave. We weren't walking back to the campground the way we came.

The Boy Scout motto is "Be Prepared." I had maps and compass. We would have to walk 2 miles due east to the paved county road on the east side of the conservation area. I shouted driving directions across the bulging stream to

the other leaders and asked them to pick us up on the county road.

The caving trip evolved into an orienteering exercise. We had practiced this many times at scout meetings, but this was the real thing.

The scouts gathered around. We positioned the compass on the map and determined the direction to walk. I asked the scouts to use the buddy system to avoid getting too spread out. This was a waste of breath. Soon scouts were strung out over a half-mile of forest, but at least everyone was heading in the right direction.

Occasionally, one of the scouts would come up to ask, "Are we lost Mr. Urich?" I always responded with the same answer, "No, check the compass and head east, young man, head east," a quote borrowed and altered from the 19th-century newspaper editor Horace Greeley, who encouraged Americans to go west.

It took more than an hour to negotiate 2 miles through the woods with 30-plus Boy Scouts. It was kind of like herding cats.

When we reached our destination, we saw an array of cars parked on the roadside, plus five fire trucks—and more over the hill. People were milling around everywhere. Finally, I was escorted to the command center, where official-

looking and serious people had tables, maps and radios.

I learned that an extraordinary chain of events occurred as we were walking across the Fuson Conservation Area.

The adult leaders who were driving around the area to meet us on the east side stopped at a local café to ask for directions. Somehow, this inquiry was interpreted as an emergency search-and-rescue for Boy Scouts lost on the Fuson Conservation Area.

First responders and county-level authorities were dispatched to the area to begin the search. Others who monitor law enforcement radio traffic arrived just to see what was going on. It was a cold, rainy day and apparently people didn't have much to do. I got to the command center just in time to stop the call for additional search-and-rescue people and equipment, including ambulances.

Search teams had been dispatched to various grids on the 1,200-acre conservation area to look for the scouts. It was amazing that more than 30 Boy Scouts making a huge amount of noise and strung out for hundreds of yards were not spotted by any of the search teams.

Needless to say, I had some explaining to do, and I'm sure there were numerous lengthy reports written by search-and-rescue authorities on the incident. We assembled the scouts around one of the fire trucks for pictures, and most of the boys had the opportunity to ride it back to the campground. The caving trip was concluded.

My tenure as a Boy Scout leader is over now. The scouts from that trip are grown and working in various fields, and I occasionally see a few of them at community events. We always chat about the caving trip, the fire trucks and the search-and-rescue teams.

I can tell from our conversations that this particular trip had an impact on their awareness of Missouri's unique cave resources and how important our management of the land above caves is to those creatures whose entire lives are spent underground.

That sudden, intense rain storm drove home the point that caves and cave animals are dependent on the quality of water that comes off the land. These former scouts became the next generation of Missouri conservationists. ▲

That **SUDDEN, INTENSE RAIN STORM** drove home the point that caves and cave animals are dependent on the **QUALITY OF WATER** that comes off the land.





Building a Bobwhite Factory

An engineer's methodical mindset
and his passion for conservation
meld into a plantation for quail.

BY JIM LOW, PHOTOS BY NOPPADOL PAOTHONG



Jeff Churan didn't know everything about quail management when he set out to turn his Livingston County farm into a quail factory. He still doesn't. But he is accumulating enough knowledge to draw up a pretty good blueprint for bobwhite success.

Churan is passionate about conservation. He served on the citizens' committee that secured voter approval of Missouri's one-eighth of 1 percent Design for Conservation sales tax in 1976. He was a Conservation Commissioner from 1983 through 1989.

Two trips to a Southern quail plantation launched his quest for bobwhite restoration. In 1988 he traveled to the Talokas Plantation near Thomasville, Ga., where he and his companions were thrilled to flush 10 coveys of quail in a day of hunting. A decade later, he returned and flushed 25 coveys.

Talokas had switched from stocking pen-reared birds to managing land exclusively for wild bobwhites.

That got Churan wondering if he could achieve similar results on The Cedars Plantation, his family's farm near Avalon, Mo.

An engineer by profession, Churan is nothing if not methodical. His approach to quail management might be described as tenacious or even obsessive. He set out to turn his 320 acres, plus 40 adjacent acres "borrowed" from neighbors, into ideal quail habitat. The only constraint on his ambitious goal of producing one quail per acre was the same one facing most landowners.

"I have to make the mortgage payment," says Churan. "Income from the land does that and more. I take what is left and put as much as possible back into management."

The first thing Churan did was draw a grid over an aerial photo of his farm, dividing it into 10-acre plots. Then he

SETTING UP HEADQUARTERS

One of Churan's major focuses is creating "covey headquarters." These compact home bases give quail everything they need within a few yards of where they hole up at night and during bad weather.

A covey headquarters typically consists of a brush pile or other piece of durable woody shelter that is surrounded by shrubby cover and is adjacent to a food source, such as a crop field. This is Churan's gold standard of quail habitat.

He initially thought he would be able to create covey headquarters in five years by building brush piles and planting shrubby cover around them. It turned out to be more complicated than he expected.

"We have had almost 90 percent survival of the trees and shrubs we planted," says Churan, "but for a long time we had to take a weed whip out into the fields to find them. Rabbits and deer kept nibbling them down to the ground. It took years for the plants to bush out enough that the animals couldn't gnaw on them so easily. Now you can finally look down a quarter-mile stretch and see rows of shrubs and trees poking up from the grass."

The Churans learned that making brush piles too robust created ideal homes for rabbits. They have reduced the browsing problem by scaling back slightly on brush pile size. They also have discovered that fragrant sumac, rough-leaved and silky dogwood and false indigo are less attractive to nibblers.

Aerial photo of Churan's entire farm, showing lots of small fields divided by field borders of woody cover. Churan divided his land into 10-acre plots in order to ensure everything that quail need to thrive was in every plot.





set out to ensure that everything quail need to thrive was available in every plot.

Creating 36 self-sufficient quail mini-habitats took extremely careful planning and lots of labor. Churan and his family have done much of the work themselves. For other tasks, they have relied on a contract farmer.

To ensure that he could show the contract farmer exactly what he had in mind, Churan went back to his aerial map. He created overlays illustrating every management variable—the land’s physical contours and soil types, field boundaries, crop rotations, grass fields and burn plans, food plots, woody cover and more.

Churan used several techniques to break large crop fields and pastures into smaller units and create mini-habitats. He embedded food plots within grassland on the flat upper parts of rolling hills. He also broke up large fields with plantings of gray and silky dogwood, wild plum, blackberry, fragrant sumac, shrub lespedeza and other woody plants. This created miles of high-energy food sources along the edges of quality quail cover. It also

Edge feathering on Churan’s farm has created many covey headquarters, desirable for a thriving quail habitat.

EDGE FEATHERING—COVEY HEADQUARTERS IN 40 MINUTES!

After years of building brush piles and planting shrubs in pursuit of creating the perfect conditions for covey headquarters, Churan discovered the magic of edge feathering.

Edge feathering is widening the sharp edge between forests and fields by felling a few medium-sized trees along the border and leaving them where they fall. Feathered edges are most beneficial to quail when the ground beneath felled trees is open. Churan kills ground-level vegetation with herbicide before starting his chain saw. Edge feathering produced a dramatic jump in covey numbers on Churan’s property.

“You can create covey headquarters-quality habitat with a chain saw in 40 minutes,” he says. “I wish we had started years sooner.”

HOW TO SPELL QUAIL SUCCESS

State and federal programs help make quail management at The Cedars affordable. Churan relies on an alphabet soup of incentive programs to get the job done. These include CRP, which provides income for taking highly erodible land out of crop production, and the Wildlife Habit Incentives Program (WHIP), which helps with quail management on acres not eligible for CRP.

Churan and his grandson hunt on The Cedars farmland. Churan limits the harvest annually to provide near-guaranteed hunting success

helped confine high-impact farming practices to the least erodible areas.

“We planted more than 25,000 trees and shrubs using the pull-behind planter that the Conservation Department loans out to landowners,” says Churan. “We got pretty good at it. If there was a contest to see who could plant the most trees with that piece of equipment, I think we could win it.”

One early innovation at The Cedars was surrounding crop fields with strips of grass at least 50 feet wide. Besides creating cover for quail near food sources, this practice prevents erosion from cropped areas.

“This was the precursor of Conservation Practice 33 under the Conservation Reserve Program,” says Churan.



“Some of our other practices, such as lightly disking pastures, anticipated the mid-contract grassland management provisions that eventually became part of CRP.”

Churan has taken a strong interest in developing grassland management strategies that benefit quail. Most of the land at The Cedars that once was fescue pasture now features a mix of warm-season grasses, such as bluestems and Indian grass, plus clover and other legumes. He has his warm-season grass fields on a three-year burn rotation to keep the stands open enough for quail to use, and he lightly disks half of the fields that he burns each year.

“We learned that there is grass, and there is *grass*,” says Churan. “Quail thrive where there is a diverse mix of habitat types. Our burning and disking arrangement creates six different stages of grass succession. We saw a big jump in quail numbers when we implemented our burn plan.”

Although he believes in the benefit of intensively managed native, warm-season grasses, Churan also recognizes that fescue, an imported, cool-season grass, plays an important role on many farms. So he kept two patches of fescue on his own land where he could experiment with making it more quail-friendly.

“Fescue actually provides excellent foraging for insects—a high-protein food that quail chicks need—when it is mixed with other plants,” he says. “Light disk-



This crop field on Churan’s farm has unharvested grain around the edges to serve as a winter food source for quail and other wildlife. This field is surrounded by warm-season grasses.

THE PROOF IS IN THE HUNTING

To accurately measure hunting success, Churan divided The Cedars into three hunting “courses” of 120 acres each. He records the number of hunts made on each course each year, along with the number of hunters, the number of hours hunted and the number of quail killed. Hunting success climbed as management practices took hold.

In 1998, hunters were finding a covey every 40 to 60 minutes. During the 2005–2006 season, they averaged one covey every 24 minutes. On one hunt, they moved nine coveys in 3.5 hours.

Theoretically, hunters should be able to harvest 55 percent of The Cedars’ estimated quail population—more than 200 birds—each year without depleting the quail population. But Churan says he is less interested in the number of birds bagged than in the quality of the hunt.

“A great quail hunt is one where you find lots of coveys and get to see lots of dog work,” says Churan. “Right now, I can almost guarantee moving six coveys in a two- or three-hour hunt on at least two of our courses. That is a quality quail hunt.”

To maintain this quality hunting throughout the season, he tries to limit the harvest to 30 percent of the area’s estimated quail population annually.

ing on our fescue fields has produced a surprisingly good growth of native weeds, such as ragweed, whose seeds are a favorite quail food.”

In the other fescue field, Churan planted shrub lespedeza and blackberries. The thorny vines have thrived, forming thickets in a draw that often holds a covey of quail.

“Of all the plantings we have done for quail habitat, this has come closest to producing covey headquarters-quality habitat,” says Churan.

His dedication to quail management and his meticulous documentation of every facet of his practical experiments won Churan the 2006 Adopt-A-Covey Award from Quail Unlimited. The resulting cover story in *Quail Unlimited Magazine* fits perfectly with his commitment to sharing what he learns with other quail enthusiasts. *Conservationist* readers can find his complete quail management plan and progress report at www.MissouriConservation.org/16115.

Churan recognizes that not everyone will tackle quail management as aggressively as he and his family have.

“You would have to be nuts to go at it the way we do,” he admits. “We do this stuff almost every weekend. But anyone with an interest in quail management can make a difference using the techniques we are developing.”

Although effective quail management is within the grasp of any landowner, Churan says it does require continuing work. “You can’t just write up a plan, cut a few trees and plant some shrubs,” he says. “Quail habitat is dynamic. You have to keep after it.” ▲

Hunting and Fishing Calendar

FISHING

	OPEN	CLOSE
Black Bass (certain Ozark streams, see the <i>Wildlife Code</i>)	5/24/08	2/28/09
impoundments and other streams year-round		
Bullfrogs and Green Frogs	Sunset	Midnight
	6/30/09	10/31/09
Gigging Nongame Fish	9/15/08	1/31/09
Trout Parks Catch and Release	11/14/08	2/9/09
Friday—Monday at Bennett Spring, Montauk and Roaring River and daily at Maramec Springs		

HUNTING

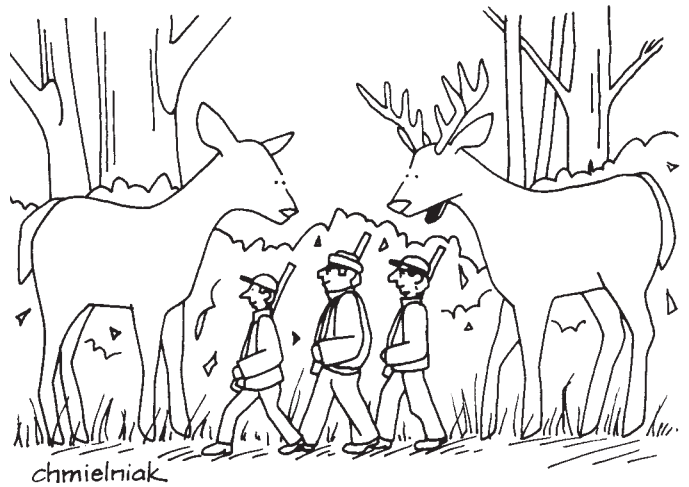
	OPEN	CLOSE
Coyotes	5/12/08	3/31/09
Crow	11/1/08	3/3/09
Deer		
Archery	9/15/08	11/14/08
	11/26/08	1/15/09
Firearms		
Youth	11/1/08	11/2/08
	1/3/09	1/4/09
November	11/15/08	11/25/08
Muzzleloader	11/28/08	12/7/08
Antlerless	12/13/08	12/21/08
Dove	9/1/08	11/9/08
Furbearers	11/15/08	1/31/09
Groundhog	5/12/08	12/15/08
Pheasants		
North Zone	11/1/08	1/15/09
South Zone	12/1/08	12/12/08
Quail	11/1/08	1/15/09
Rabbits	10/1/08	2/15/09
Ruffed Grouse	10/15/08	1/15/09
Sora and Virginia Rails	9/1/08	11/9/08
Squirrels	5/24/08	2/15/09
Turkey		
Archery	9/15/08	11/14/08
	11/26/08	1/15/09
Waterfowl	please see the <i>Waterfowl Hunting Digest</i> or see www.missouriconservation.org/7573	
Wilson's (common) Snipe	9/1/08	12/16/08
Woodcock	10/15/08	11/28/08

TRAPPING

	OPEN	CLOSE
Beaver and Nutria	11/15/08	3/31/09
Furbearers	11/15/08	1/31/09
Otters and Muskrats	11/15/08	see <i>Wildlife Code</i>

For complete information about seasons, limits, methods and restrictions, consult the *Wildlife Code* and the current summaries of *Missouri Hunting and Trapping Regulations* and *Missouri Fishing Regulations*, the *Fall Deer and Turkey Hunting Regulations and Information*, the *Waterfowl Hunting Digest* and the *Migratory Bird Hunting Digest*. For more information visit www.MissouriConservation.org/8707 or permit vendors.

The Department of Conservation's computerized point-of-sale system allows you to purchase or replace your permits through local vendors or by phone. The toll-free number is 800-392-4115. Allow 10 days for delivery of telephone purchases. To purchase permits online go to www.wildlifelicenses.com/mo/.



"Not a problem. They're small game hunters."

Contributors



JIM LOW lost his treasured duck-hunting companion, Guinness, to illness in July. He cherishes memories of hunting diving ducks with her and looks forward to welcoming a new canine member to his family around Thanksgiving. Guinness made her debut on the cover of the May 2001 *Conservationist*.

Prior to his recent retirement, DAVID URICH was the Wildlife Division's Ozark unit chief. He was a 30-year employee with the Department. David lives on a 40-acre farm in Moniteau County where he and his wife, Jennifer, raised three sons. Rabbit hunting and fishing are among his many hobbies.



MICHELL BELL, BUFFALO REFLEX REPORTER

Share the Harvest

Share the Harvest is a program that allows hunters to donate venison to needy Missourians. ABC Motors in Buffalo is trying to get the word out about Share The Harvest. Brian Ainley, the owner, feels strongly about the STH program and donated the sign time in hopes of getting more participation in the program. Learn how you can contribute at www.MissouriConservation.org/9032.

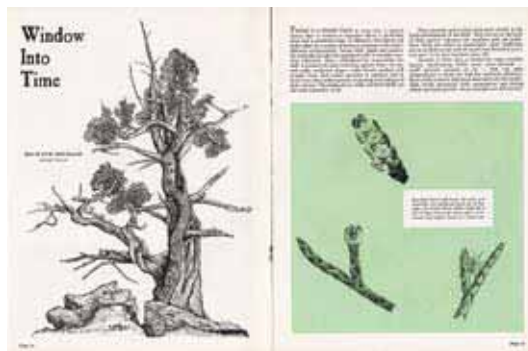
In the photo from left: Eric Beltz, Dallas County Conservation Agent Matt Hittings, Springfield District Supervisor Alan Daniels and Brian Ainley.

TIME CAPSULE

November 1978

Window Into Time was written by Rich Guyette about Missouri's eastern red cedar trees. In Missouri, red cedar trees show a variety of shapes based on different environments. In the grasslands, they have a "teardrop silhouette."

They produce tall trees on dry and southwest slopes. In fence rows and pastures they can reflect the "periods of grazing in the shapes of their crowns." In river bluffs and creeks, the trees grow slowly, twisted and gnarled in the harsh environment of the bluffs. Trees accumulate a layer of wood on their branches and trunk every year. Two kinds of wood that make up their growth are summerwood, a darker and denser color, and springwood, a lighter color wood. —Contributed by the Circulation staff



AGENT NOTES

Identifying ducks on the wing is fun and it will help you stay legal.

THE HISS OF wings cutting the air filled the still morning as a group of "black-jacks" passed over my head, made a wide circle over the water and headed toward a duck blind that I had been observing. As the group of tightly bunched ducks passed low over their decoys, the two hunters in the blind fired a volley, dropping four birds from the flock. I winced as I watched this because I knew that when I checked these hunters there was a chance they were in violation.

Limits for different species of ducks vary greatly. To stay within the law, hunters need to be able to identify which species of ducks they are shooting. For example, "blackjack" is a name that some hunters use to describe two species of ducks: ring-necked and scaup. These birds are somewhat difficult to distinguish from each other as both are mainly black and white. However, the limits are very different. Hunters may take one scaup per day as opposed to six ring-necked ducks. Another two species that give hunters pause are canvasbacks and redheads. Both have red heads and an overall gray and white appearance, but the limit for redheads is two per day while the canvasback season is closed for 2008. Reduced limits or closed seasons are in place to give some species of waterfowl time to recover from low production years.

There are marks that help identify these species in the air. Hunters should brush up on their waterfowl identification skills prior to heading to the blind. For a free publication, write to MDC, *Ducks at a Distance*, PO Box 180, Jefferson City, MO 65102-0180 or e-mail pubstaff@mdc.mo.gov.



Matt Wolken is the protection regional supervisor for the Northeast region. If you would like to contact the agent for your county, phone your regional Conservation office listed on Page 3.

behind the CODE

Spotlighting game is banned to protect property and wildlife.

BY TOM Cwynar

Shining a light into farm fields and forest openings to spot deer and other wildlife that are more active at night seems like innocent fun. The practice, however, has the potential to disturb rural landowners—perhaps even frighten them. It also could interfere with wildlife activities, and it increases the difficulty of enforcing the regulation that prohibits the use of lights to illegally take wildlife.

The *Wildlife Code*, therefore, comprehensively prohibits the use of artificial lights, including headlights and spotlights, to search for or disturb in any manner any wildlife, except raccoons or other furbearers treed with the aid of dogs.

The prohibition applies to all roadways, fields, woodland or forests, whether public or private. Landowners or lessees may use lights on property under their control, but not while in the possession of any weapon.

That's because the *Wildlife Code* prohibits anyone from casting rays of artificial light to spot, search for or take any game animal, or to use night-vision equipment for those purposes, while in the possession of any firearm, bow or other implement that could be used to kill game. Again, raccoon and furbearers hunters may use lights to search for animals treed by dogs.

The complete ban on spotlighting, which even extends to altering the position of a vehicle so as to use its headlights to observe wildlife, may seem excessive, but it is necessary to protect landowners and their property, and our wildlife resources.



“I AM CONSERVATION”

Taylor Daly, 14, has been hunting quail for 3 years. Her dad, Jason, an avid hunter, got her started in their long family tradition. In fact, Taylor is wearing a quail-hunting coat that first belonged to her great-grandfather. The coat has been passed down over the generations, and her dad has now passed it on to her. Taylor loves quail hunting so much, during the season she will go hunting at Poosey CA in Livingston County everyday she can after school.

“The Poosey area is an awesome place to go because it is filled with tons of quail and pheasants,” said Taylor. To learn more about conservation activities, visit www.MissouriConservation.org.—PHOTO BY DAVID STONNER



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Missouri households*